CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 95-131

REVISING SITE CLEANUP REQUIREMENTS FOR:

HEWLETT PACKARD COMPANY

for the property located at

690 EAST MIDDLEFIELD ROAD
MOUNTAIN VIEW
SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter the Board), finds that:

1. **Site Location**: The site is located at 690 East Middlefield Road in Mountain View. It has also been previously identified as being located at 333 Logue Avenue. The site is bounded by East Middlefield Road on the southwest, Logue Avenue on the west, Maude Avenue on the northeast, and Mountain View/Alviso Road (highway 237) on the southeast. Three buildings occupy the site and are currently used for software duplication and distribution, parts distribution, and administrative offices. Areas surrounding the building are paved. Adjacent properties are developed for commercial and light industrial use. Prior to the early 1960s, land use in the site vicinity was agricultural.

2. **Site History**: Hewlett Packard Company (HP) began construction of the buildings in 1966. Previous activities on the site included metal cleaning, polishing, coating and painting operations, and production and testing of magnetic head assemblies. These activities required the use of chemical such as degreasers, paint thinners, acids, and detergents; and generated a variety of hazardous wastes. As a result of subsurface soil investigations by HP beginning in 1983, volatile organic compounds (VOCs) were detected at the site.

3. **Named Dischargers**: HP, as owner and operator of the site, is named as a discharger. If additional information is submitted indicating that other parties caused or permitted any waste to be discharged on the site where it entered or could have entered waters of the State, the Board will consider adding that party's name to this Order.

4. **Site Hydrogeology**: The land surface is relatively flat, sloping gently north-northeast toward San Francisco Bay, about 3.5 miles away. The site is underlain by fluvial deposits

consisting of interbedded, laterally discontinuous layers of clay, silt, sand, and gravel. Silts, clays and silty sand predominate in the upper 15 feet of the stratigraphic section. These sediments lie above the water table. Sand and gravel beds, with some interbedded clayey silts to silty clays, lie immediately below this uppermost zone of finer-grained sediments. These beds, believed to represent stream channel deposits, are classified as the "A" aquifer. Underlying a 10- to 20-foot thick sequence of clayey silt to silty clay (A-B aquitard) are several beds of sand and gravel considered as the "B" aquifer. The uppermost sand and gravel bed in the "B" aquifer is 10 to 15 or more feet thick.

Depth to groundwater ranges from 18 to 26 feet below ground surface with the depth decreasing northward across the site and beyond to Maude Avenue. Groundwater in the saturated zone is migrating approximately north at a gradient of about 0.004 ft/ft.

5. **Remedial Investigation**: The principal VOC at the site is trichloroethylene (TCE) (up to 1 ppm in soil and 13 ppm in groundwater). Perchloroethylene (PCE) has also been detected onsite (up to 7.2 ppm in soil and 1 ppm in groundwater). Other VOCs detected at the site include 1,1,1-trichloroethane, dichloroethylene, chloroform, and methylene chloride. Potential source areas include a loading dock area in Building 30 and a former underground solvent storage tank area. Concentrations have been reduced since remedial measures began. Highest groundwater concentrations for TCE and PCE are currently about 1 ppm and 380 ppb, respectively.

   Groundwater pollution at the HP site extends to the north site boundary. HP installed 14 off-site monitoring wells to investigate the extent of plume migration from the site and to identify potential off-site sources upgradient and downgradient of the property. Off-site investigations identified several potential sources which are described in Finding 7. Remedial investigations beyond the HP site boundary are currently being conducted by other dischargers in the region.

6. **Remedial Measures**: HP installed a groundwater extraction and treatment system (GWETS) in July 1988 and has operated it continuously since then. The GWETS was installed to remediate on-site groundwater and to prevent groundwater contamination from migrating off-site. As of December 1994, nearly 13 million gallons of groundwater have been extracted, treated utilizing air stripping and carbon absorption canisters, and discharged to surface waters. Approximately 80 pounds of VOCs have been removed. The effectiveness of the GWETS should be reviewed at this time to evaluate its current performance and to propose modifications as needed.

   HP began operating a soil-vapor extraction system (VES) in 1988 to remove VOCs from the vadose zone. HP operated the VES continuously until 1994 and removed approximately 43 pounds of VOCs from the affected soils in the area. Board staff gave approval to shut down the VES in December 1994 after sampling indicated that the affected soils had been effectively remediated. The VES remains in place and on standby status.

7. **Adjacent Sites**: EM Corporation (EM), located immediately northeast of the site at 875 Maude Avenue (see map) is considered a source of groundwater contamination. The Board adopted Cleanup and Abatement Order 93-099 for EM on September 9, 1993, requiring investigation and cleanup at EM as appropriate.

   Other sites include (see map):

   a. a potential TCE source at the rear of the facility at 889 Maude Avenue. Water samples from well W45 have contained up to 150 ppb TCE while upgradient well W17 has consistently shown no detectable concentrations of TCE.

   b. a potential VOC source at the rear of the facility at 815 or 835 Maude Avenue. VOCs detected in well W13 (TCE, TCA, DCE, DCA) have shown levels up to 500 ppb while upgradient wells W14 and W15 have shown no or very low detectable concentrations.

   c. A potential PCE source at 440 Clyde Avenue. Elevated concentrations in wells W39, W41, and W42 indicate that there may be a separate source area. PCE concentrations in well W39 have consistently been higher than any other HP monitoring well, averaging about 1000 ppb.

   Investigation and cleanup at these site will also be required as appropriate.

8. **Regulatory Status**: The Board adopted Order No. 88-122 (Site Cleanup Requirements) on July 20, 1988. Work completed pursuant to the Order included a report containing the results of remedial investigations, evaluation of the installed interim remedial measures, and a feasibility study evaluating final remedial alternatives. The intent of this Order is to revise Order 88-122 to include requirements for evaluating the performance of the groundwater remedial actions and preparation of proposed final remedial action plan.

   HP received authorization to discharge under Order 94-087, "General Waste Discharge Requirements for Discharge or Reuse of Extracted and Treated Groundwater Resulting from the Cleanup of Groundwater Polluted by Volatile Organic Compounds", on December 16, 1994. The General Permit rescinded NPDES Permit Order No. 88-095.

9. **Basin Plan**: The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on December 17, 1986, and the State Board approved it on May 21, 1987. The Board has amended the Basin Plan several times since then. The Basin Plan defines beneficial uses and water quality objectives for waters of the State, including surface waters and groundwaters.

The potential beneficial uses of groundwater underlying and adjacent to the site include:

a. Municipal and domestic water supply
b. Industrial process water supply
c. Industrial service water supply
d. Agricultural water supply

At present, there is no known use of groundwater underlying the site for the above purposes.

10. **Other Board Policies**: Board Resolution No. 88-160 strongly encourages dischargers of extracted, treated groundwater from site cleanups to reuse it or discharge it to the sanitary sewer.

    Board Resolution No. 89-39, "Sources of Drinking Water," defines potential sources of drinking water to include all groundwater in the region, with limited exceptions for areas of high TDS, low yield, or naturally-high contaminant levels.

11. **State Water Board Policies**: State Water Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California," applies to this discharge and requires attainment of background levels of water quality, or the highest level of water quality which is reasonable if background levels of water quality cannot be restored. Non-background cleanup levels must be consistent with the maximum benefit to the people of the State, not unreasonably affect present and anticipated beneficial uses of such water, and not result in exceedance of applicable water quality objectives.

    State Water Board Resolution No. 92-49, "Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304," applies to this discharge. This order and its requirements are consistent with the provisions of Resolution No. 92-49, as amended.

12. **Basis for 13304 Order**: The discharger has caused or permitted waste to be discharged or deposited where it is or probably will be discharged into waters of the State and creates or threatens to create a condition of pollution or nuisance.

13. **Cost Recovery**: Pursuant to California Water Code Section 13304, the discharger is hereby notified that the Board is entitled to, and may seek reimbursement for, all reasonable costs actually incurred by the Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this order.

14. **CEQA**: This action is an order to enforce the laws and regulations administered by the Board. As such, this action is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to Section 15321 of the Resources Agency Guidelines.

15. **Notification**: The Board has notified the discharger and all interested agencies and persons of its intent under California Water Code Section 13304 to prescribe site cleanup requirements for the discharge, and has provided them with an opportunity to submit their written comments.

16. **Public Hearing**: The Board, at a public meeting, heard and considered all comments pertaining to this discharge.

IT IS HEREBY ORDERED, pursuant to Section 13304 of the California Water Code, that the discharger (or its agents, successors, or assigns) shall cleanup and abate the effects described in the above findings as follows:

A. PROHIBITIONS

1. The discharge of wastes or hazardous substances in a manner which will degrade water quality or adversely affect beneficial uses of waters of the State is prohibited.

2. Further significant migration of wastes or hazardous substances through subsurface transport to waters of the State is prohibited.

3. Activities associated with the subsurface investigation and cleanup which will cause significant adverse migration of wastes or hazardous substances are prohibited.

B. TASKS

1. EVALUATION OF REMEDIAL ACTIONS

COMPLIANCE DATE: September 1, 1995

Submit a technical report acceptable to the Executive Officer evaluating the performance of the interim groundwater remedial measures. The report should also evaluate modifications to the system, and propose modifications as appropriate. Any proposed modification shall include a time schedule for completion.

2. **IMPLEMENTATION OF REMEDIAL ACTION MODIFICATIONS**

COMPLIANCE DATE: according to time schedule approved in Task B.1.

Submit a technical report acceptable to the Executive Officer documenting the implementation of any modifications to the interim groundwater remedial measures proposed pursuant to Task B.1.

3. **PROPOSED FINAL REMEDIAL ACTIONS AND CLEANUP STANDARDS**

COMPLIANCE DATE: September 1, 1996

Submit a technical report acceptable to the Executive Officer containing:

a. Feasibility study evaluating alternative remedial actions
b. Risk assessment for current and post-cleanup exposures
c. Recommended final remedial actions and cleanup standards
d. Implementation tasks and time schedule

The technical report should address a study area including the HP property as well as downgradient areas affected by the migration of HP's contaminant plume. Other downgradient property owners and/or responsible parties that have contributed to the contaminant plume will also be required to perform additional or complementary remedial actions in the study area.

Items a through c should include projections of cost, effectiveness, benefits, and impact on public health, welfare, and the environment of each alternative action.

Items a through c should be consistent with the guidance provided by Subpart F of the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300), CERCLA guidance documents with respect to remedial investigations and feasibility studies, Health and Safety Code Section 25356.1(c), and State Board Resolution No. 92-49 as amended ("Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304").

4. **Delayed Compliance**: If the discharger is delayed, interrupted, or prevented from meting one or more of the completion dates specified for the above tasks, the discharger shall promptly notify the Executive Officer and the Board may consider revision to this Order.

C. PROVISIONS

1. **No Nuisance**: The storage, handling, treatment, or disposal of polluted soil or groundwater shall not create a nuisance as defined in California Water Code Section 13050(m).

2. **Good O&M**: The discharger shall maintain in good working order and operate as efficiently as possible any facility or control system installed to achieve compliance with the requirements of this Order.

3. **Cost Recovery**: The discharger shall be liable, pursuant to California Water Code Section 13304, to the Board for all reasonable costs actually incurred by the Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this Order. If the site addressed by this Order is enrolled in a State Board-managed reimbursement program, reimbursement shall be made pursuant to this Order and according to the procedures established in that program. Any disputes raised by the discharger over reimbursement amounts or methods used in that program shall be consistent with the dispute resolution procedures for that program.

4. **Access to Site and Records**: In accordance with California Water Code Section 13267(c), the discharger shall permit the Board or its authorized representative:

    a. Entry upon premises in which any pollution source exists, or may potentially exist, or in which any required records are kept, which are relevant to this Order.

    b. Access to copy any records required to be kept under the requirements of this Order.

    c. Inspection of any monitoring or remediation facilities installed in response to this Order.

    d. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the discharger.

5. **Self-Monitoring Program**: The discharger shall comply with the Self-Monitoring Program as attached to this Order and as may be amended by the Executive Officer.

6. **Contractor/ Consultant Qualifications**: All hydrogeologic documents (plans, specifications, and reports) shall be signed by and stamped with the seal of a California registered geologist, a California certified engineering geologist, or a California registered civil engineer.

7. **Lab Qualifications**: All samples shall be analyzed by State-certified laboratories or laboratories accepted by the Board using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control (QA/QC) records for Board review. This provision does not apply to analyses that can only reasonably be performed on-site (e.g. temperature).

8. **Document Distribution**: Copies of all correspondence, technical reports, and other documents pertaining to compliance with this Order shall be provided to the following agencies:

    a. City of Mountain View
    b. Santa Clara County Health Department
    c. Santa Clara Valley Water District

9. **Reporting of Changed Owner or Operator**: The discharger shall file a technical report on any changes in site occupancy or ownership associated with the property described in this Order.

10. **Reporting of Hazardous Substance Release**: If any hazardous substance is discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, the discharger shall report such discharge to the Regional Board by calling (510) 286-1255 during regular office hours (Monday through Friday, 8:00 to 5:00).

    A written report shall be filed with the Board within five working days. The report shall describe: the nature of the hazardous substance, estimated quantity involved, duration of incident, cause of release, estimated size of affected area, nature of effect, corrective actions taken or planned, schedule of corrective actions planned, and persons/agencies notified.

    This reporting is in addition to reporting to the Office of Emergency Services required pursuant to the Health and Safety Code.

11. **Rescission of Existing Order**: This Order rescinds Order No. 88-122.

12. **Periodic SCR Review**: The Board will review this Order periodically and may revise it when necessary. The discharger may request revisions and upon review the Executive Officer may recommend that the Board revise these requirements.

I, Steven R. Ritchie, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on June 21, 1995.

Steven R. Ritchie
Executive Officer

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FAILURE TO COMPLY WITH THE REQUIREMENTS OF THIS ORDER MAY SUBJECT YOU TO ENFORCEMENT ACTION, INCLUDING BUT NOT LIMITED TO: IMPOSITION OF ADMINISTRATIVE CIVIL LIABILITY UNDER WATER CODE SECTIONS 13267 OR 13350, OR REFERRAL TO THE ATTORNEY GENERAL FOR INJUNCTIVE RELIEF OR CIVIL OR CRIMINAL LIABILITY

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Attachments: Site Map
Self-Monitoring Program

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM FOR:

HEWLETT PACKARD COMPANY

for the property located at

690 EAST MIDDLEFIELD ROAD
MOUNTAIN VIEW
SANTA CLARA COUNTY

1. **Authority and Purpose**: The Board requests the technical reports required in this Self-Monitoring Program pursuant to Water Code Sections 13267 and 13304. This Self-Monitoring Program is intended to document compliance with Board Order No. **95-XXX** (site cleanup requirements).

2. **Monitoring**: The discharger shall measure groundwater elevations quarterly in all monitoring wells, and shall collect and analyze representative samples of groundwater according to the following schedule:

Well #	Sampling Frequency	Analyses	Well #	Sampling Frequency	Analyses
W5A	A	8010	W28	A	8010
W5B	A	8010	W31	Q	8010
W6	SA	8010	W33	Q	8010
W7	SA	8010	W34	Q	8010
W8A	A	8010	W35	A	8010
W8B1	A	8010	W36	SA	8010
W11	Q	8010	W37	A	8010
W13	A	8010	W39	Q	8010
W15	SA	8010	W40	A	8010
W17	SA	8010	W41	SA	8010
W18	SA	8010	W42	SA	8010

W26	SA	8010	W45	SA	8010
W27	SA	8010	E1-6	Q	8010

Key: Q = Quarterly
SA = Semi-Annually
A = Annually
8010 = EPA Method 8010 or equivalent

The discharger shall sample any new monitoring or extraction wells quarterly and analyze groundwater samples for the same constituents as shown in the above table. The discharger may propose changes in the above table; any proposed changes are subject to Executive Officer approval.

3. **Quarterly Monitoring Reports**: The discharger shall submit quarterly monitoring reports to the Board no later than 30 days following the end of the quarter (e.g. first quarter report due April 30). The first quarterly monitoring report shall be due on April 30, 1995. The reports shall include:

   a. Transmittal Letter: The transmittal letter shall discuss any violations during the reporting period and actions taken or planned to correct the problem. The letter shall be signed by the discharger's principal executive officer or his/her duly authorized representative, and shall include a statement by the official, under penalty of perjury, that the report is true and correct to the best of the official's knowledge.

   b. Groundwater Elevations: Groundwater elevation data shall be presented in tabular form, and a groundwater elevation map should be prepared for each monitored water-bearing zone. Historical groundwater elevations shall be included in the fourth quarterly report each year.

   c. Groundwater Analyses: Groundwater sampling data shall be presented in tabular form, and an isoconcentration map should be prepared for one or more key contaminants for each monitored water-bearing zone, as appropriate. The report shall indicate the analytical method used and detection limits obtained for each reported constituent. Historical groundwater sampling results shall be included in the fourth quarterly report each year. The report shall describe any significant increases in contaminant concentrations since the last report, and any measures proposed to address the increases. Supporting data, such as lab data sheets, need not be included (however, see record keeping - below).

   d. Groundwater Extraction: If applicable, the report shall include groundwater extraction results in tabular form, for each extraction well and for the site as a whole, expressed in gallons per minute and total groundwater volume for the quarter. The report shall also include contaminant removal results, from groundwater extraction wells and from other remediation systems (e.g. soil vapor extraction), expressed in

units of chemical mass per day and mass for the quarter. Historical mass removal results shall be included in the fourth quarterly report each year.

e. Status Report: The quarterly report shall describe relevant work completed during the reporting period (e.g. site investigation, interim remedial measures) and work planned for the following quarter.

4. **Violation Reports**: If the discharger violates requirements in the Site Cleanup Requirements, then the discharger shall notify the Board office by telephone as soon as practicable once the discharger has knowledge of the violation. Board staff may, depending on violation severity, require the discharger to submit a separate technical report on the violation within five working days of telephone notification.

5. **Other Reports**: The discharger shall notify the Board prior to any site activities, such as construction or underground tank removal, which have the potential to cause further migration of contaminants or which would provide new opportunities for site investigation.

6. **Record Keeping**: The discharger or his/her agent shall retain data generated for the above reports, including lab results and QA/QC data, for a minimum of six years after origination.

7. **SMP Revisions**: Revisions to the Self-Monitoring Program may be ordered by the Executive Officer, either on his/her own initiative or at the request of the discharger. Prior to making SMP revisions, the Executive Officer will consider the burden, including costs, of associated self-monitoring reports relative to the benefits to be obtained from these reports.

I, Steven R. Ritchie, Executive officer, hereby certify that this Self-Monitoring Program was adopted by the Board on June 21, 1995.

Steven R. Ritchie
Executive Officer